EXPERIMENT : 1

Title : Introduction to Python Programming

Objective : To learn Basics of Python -> Syntax ,Variables,Data Types, Built in Python Functions/Methods(print(),type(),.format(),etc),Arithmetic Operations.

Code :

```python
#Python DSP Introduction

print("First line for Python Code")
print("I am from RCCIIT ECE Department\n")           #\n adds extra line

#Naming Convention
t = 4
r = "RCCIIT"
print("The value of t is :",t)
print("The value of r is :",r,"\n")

#Using String Formatting
"String Formatting : The process of creating formatted strings by embedding variables or values into a string."
print("The values are {} and {} (used String Formatting)".format(t,r),"\n")

#Python variables and datatypes
x = 24          #integer
f = 46.9         #float
s = "DSP_Lab"      #String

#print and type (built in functions)
""" print() : print() is a built-in function used to display output to the console or terminal.
    type() function is a built-in function that allows you to determine the type of a given object.
"""
print("Printing values of defined variables with their data type !!\n")
print("x =",x,type(x))
print("f =",f,type(f))
print("s =",s,type(s),"\n")

print("The following arithmetic operations are printed using string formatting\n ")
"""
   Arithmetic Operations
   -> 2 * 4
   -> 7/3
   -> 4 + 8
   -> 5 - 3
```

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```
    -> 2 pow(**) 0
    -> 324 % 10 (reminder)
    -> 18 // 3 Quotient
"""
a = 563
b = 8
c = 2
d = 3
e = 34.81
g = 19.86
print("The Multiplication of {} and {} is : {}".format(e,g,e * g),type(e * g))
print("The Division of {} and {} is : {}".format(c,d,c / d),type(c / d))
print("The Addition of {} and {} is : {}".format(a,b,a + b),type(a + b))
print("The Subtraction of {} and {} is : {}".format(a,b,a - b),type(a - b))
print("The Value of {} to the power of {} is : {}".format(c,b,c ** b),type(c ** b))
print("The Remainder of {} for {} is : {}".format(a,b,a % b),type(a % b))
print("The Quotient od {} for {} is : {}".format(a,b,a // b),type(a // b))
```

Output :

```
First line for Python Code
I am from RCCIIT ECE Department

The value of t is : 4
The value of r is : RCCIIT

The values are 4 and RCCIIT (used String Formatting)

Printing values of defined variables with their data type !!

x = 24 <class 'int'>
f = 46.9 <class 'float'>
s = DSP_Lab <class 'str'>

The following arithmetic operations are printed using string formatting

The Multiplication of 34.81 and 19.86 is : 691.3266 <class 'float'>
The Division of 2 and 3 is : 0.6666666666666666 <class 'float'>
The Addition of 563 and 8 is : 571 <class 'int'>
The Subtraction of 563 and 8 is : 555 <class 'int'>
The Value of 2 to the power of 8 is : 256 <class 'int'>
The Remainder of 563 for 8 is : 3 <class 'int'>
The Quotient od 563 for 8 is : 70 <class 'int'>
```